

## Yacovone, Krista

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**From:** DiPippo, Gary <Gary.DiPippo@Cornerstoneeg.com>  
**Sent:** Wednesday, October 30, 2013 6:59 AM  
**To:** Gorin, Jonathan  
**Cc:** John M. Hoffman; Carrie McGowan  
**Subject:** RE: Quick Questions  
**Attachments:** 0830\_001.pdf.pdf; 0831\_001.pdf.pdf

Jon,

Is either of these perhaps what you are referring to? This is all that I have in the way of short guidance items.

Let me know if this is not it, and I can look again.

Gary

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**From:** Gorin, Jonathan [mailto:Gorin.Jonathan@epa.gov]  
**Sent:** Tuesday, October 29, 2013 5:27 PM  
**To:** DiPippo, Gary  
**Cc:** John M. Hoffman; Carrie McGowan  
**Subject:** RE: Quick Questions

Hey Gary, another hopefully quick one. You know that short EPA mercury LDR guidance? I can't find a copy in my gerbil cage of a cubicle, and I can't seem to locate it on line anymore. So either my google skills are waning or it may have fell into a memory hole. Would you have a copy readily available that you can send me?

Thanks, jon

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**From:** DiPippo, Gary [mailto:Gary.DiPippo@Cornerstoneeg.com]  
**Sent:** Monday, October 28, 2013 5:45 PM  
**To:** Gorin, Jonathan  
**Cc:** John M. Hoffman; Carrie McGowan  
**Subject:** RE: Quick Questions

John,

We did not do much of an analysis of rail transport, other than acknowledge it might be a possibility, but would also require reactivating a rail spur at the site. As you may be implying below, this was not an over-riding consideration as the more substantive issue has been the inability to confirm acceptance, along with other issues such as the likely need for an LDR variance if it were in the US.

I hope this helps. If there is anything else I can do, please let me know.

Gary

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**From:** Gorin, Jonathan [mailto:Gorin.Jonathan@epa.gov]  
**Sent:** Monday, October 28, 2013 5:22 PM  
**To:** DiPippo, Gary  
**Cc:** John M. Hoffman; Carrie McGowan  
**Subject:** Quick Questions

Gary, i recall we discussed using trains to remove soil at one time. Do you remember any findings pertaining to that? Not very important, just cover the bases.

Carrie the LCP Bridge Street RPM isn't around right now. Do you know what sort of cap/cover they ended up using? The stuff i found on line is contradictory. If not, no problem, i can check with him when he gets back.

thanks, jon

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<http://www.epa.gov/epaoswer/hazwaste/mercury/treatmnt.htm>  
Last updated on Wednesday, December 5th, 2007.

## Mercury

You are here: [EPA Home](#) [Mercury](#) [Safe Mercury Management](#) [Laws & Regs](#) [LDRs](#)

### Land Disposal Restrictions Regulations for Mercury-Containing Non-wastewaters

MERCURY SUBCATEGORY DESCRIPTION	LDR TREATMENT REQUIREMENTS	APPLICABLE WASTE CODES	FEDERAL REGISTER PUBLICATION
	Concentration in mg/l TCLP; or Technology Code		
High Mercury-Organic Subcategory (i.e., the waste has a total mercury content greater than or equal to 260 mg/kg), contains organics, and is not an incinerator residue	Incineration (IMERC); OR Roasting or Retorting (RMERC)	D009 P092	55 FR 22569 (June 1, 1990) b
Mercury fulminate waste regardless of total mercury content and is not an incinerator or RMERC residue.	IMERC	P065	55 FR 22569 (June 1, 1990) b
Phenylmercury acetate waste regardless of total mercury content and is not an incinerator or RMERC residue.	IMERC; OR RMERC	P092	55 FR 22569 (June 1, 1990) b
High Mercury-Inorganic Subcategory (i.e., the waste has a total mercury content greater than or equal to 260 mg/kg), and is inorganic,	RMERC	D009 K106 U151	55 FR 22569 (June 1, 1990) b

including residues from incineration, roasting and retorting.			
Low Mercury Subcategory (i.e., the waste has a total mercury content less than 260 mg/kg), and that are residues from RMERC only.	0.20 mg/l TCLP	D009 <sup>a</sup> K071 K106 P065 P092 U151	55 FR 22569 (June 1, 1990) <sup>b</sup>  K071 - 53 FR 31166 (August 17, 1988)  D009 treatment standard revised 63 FR 28568 (May 26, 1998)
Low Mercury Subcategory (i.e., the waste has a total mercury content less than 260 mg/kg), and are not residues from RMERC.	0.025 mg/l TCLP	D009 <sup>a</sup> K071 K106 P065 P092 <sup>k</sup>	55 FR 22569 (June 1, 1990) <sup>b</sup>  K071- 53 FR 31166 (August 17, 1988)  D009 treatment standard revised 63 FR 28568 (May 26, 1998)
Elemental mercury contaminated with radioactive materials.	AMLGM	D009 U151	55 FR 22569 (June 1, 1990) <sup>b</sup>
Hydraulic oil contaminated with Mercury Radioactive Materials Subcategory.	IMERC	D009	55 FR 22569 (June 1, 1990) <sup>b</sup>



<http://www.epa.gov/epaoswer/hazwaste/mercury/regs.htm>  
Last updated on Wednesday, December 5th, 2007.

## Mercury

You are here: [EPA Home](#) [Mercury](#) [Safe Mercury Management](#) Mercury Laws and Regulations

# Mercury Laws and Regulations

## State Legislation and Regulations

### How does EPA regulate mercury in waste?

Many states have enacted legislation and written regulations with the goal of reducing mercury emissions to air, land and water. These actions cover a range of topics, including banning the sale of certain mercury-containing products, enacting product-labeling legislation, establishing disposal bans and establishing education and collection programs for mercury and mercury-containing products.

State regulations for mercury use and release can be more stringent than federal regulations. We recommend that you contact the appropriate state environmental office for more information regarding how mercury might be regulated in your state. The [state environmental agencies](#) provide links to various state and regional environmental offices with information regarding mercury regulation in their jurisdictions.

The links below may take you out of the EPA.gov domain and to external links. [EXIT Disclaimer](#)

## National Laws and Regulations

Mercury-contaminated hazardous wastes can be specifically regulated under Resource Conservation and Recovery Act (RCRA) through a number of different regulations, including:

- **Hazardous Waste Identification Regulations (40 CFR Part 261)**: Classification of solid wastes as hazardous wastes is based on exhibited hazardous waste characteristics and/or on inclusion of the waste on a list of hazardous waste developed by EPA. Once a waste has been identified as hazardous, it must comply with all applicable Federal regulations regarding its management.
- **Universal Waste Regulations (40 CFR Part 273)**: Streamlined collection requirements for certain wastes including batteries, lamps, and pesticides. Discarded mercury-containing equipment was added to the federal list of universal wastes in August 2005.
- **Land Disposal Restrictions (LDR) Regulations (40 CFR Part 268)**: Regulations to minimize hazards from the land disposal of hazardous wastes by setting treatment standards for mercury in hazardous wastes that must be achieved before land disposal. Other LDR-related regulations that may be of interest include the national treatment variance for radioactively contaminated batteries and standards for contaminated debris and soil.

[About PDF](#)

### Safe Mercury Management Information

#### SMM Home

- Basic Information
- Medical/Dental Wastes
- Car Switches
- Collection/Recycling
- Schools
- Mercury-Containing Products
- Videos

#### Where You Live

#### Laws and Regulations

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Files

## Hazardous Waste Identification Regulations

A waste is identified as hazardous if it exhibits any of the four hazardous waste characteristics (ignitability, corrosivity, reactivity, or toxicity). A waste is also identified as hazardous if it appears on any of the four lists of hazardous wastes developed by EPA. You may find that some mercury wastes are identified as hazardous by these regulations.

If mercury levels in a waste exceed the Toxicity Characteristic Leach Test (TCLP) level of 0.2 mg/L for mercury, then the waste is identified as a hazardous waste based on the toxicity characteristic. EPA assigns a separate unique mercury waste code based on the type of hazardous waste identified. A specific "D" waste code for a waste which exhibits the toxicity characteristic (TC) for mercury is D009. See 40 CFR 261.24 [\[EXIT Disclaimer\]](#).

### Did you know?

Under RCRA, the management of **Household Hazardous Waste** is primarily regulated by state, tribal and local governments.

[Learn more.](#)

Certain mercury-containing wastes are identified as hazardous wastes based on whether they are listed as hazardous in whole or in part because of the presence of mercury. See 40 CFR 261.30 through 261.33 [\[EXIT Disclaimer\]](#). Wastes which are listed as hazardous because of mercury include:

Waste Code	Description
K071	Brine purification muds from the mercury cell process in chlorine production, in which separately pre-purified brine is not used
K106	Wastewater treatment sludge from the mercury cell process in chlorine production
K175	Wastewater treatment sludge from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process
P065	Mercury fulminate
P092	Phenylmercury acetate
U151	Mercury

### Remember

- Once a waste is identified as a hazardous waste, it is subject to all applicable Federal regulations regarding its management.
- An official compendium of analytical and sampling methods available for use in determining the presence of mercury in waste can be found in SW-846. These approved tests are used to comply with RCRA regulations.

## Universal Waste Regulations

The universal waste regulations streamline collection requirements for certain hazardous wastes in the following categories: batteries, pesticides, mercury-containing equipment (e.g., thermostats) and lamps (e.g., fluorescent bulbs). The rule is designed to reduce hazardous

waste in the municipal solid waste (MSW) stream by making it easier for universal waste handlers to collect these items and send them for recycling or proper disposal.

You can find the universal waste regulations at [40 CFR Part 273](#).

And don't forget the [state regulations](#), especially regarding universal wastes! States can make the regulations more stringent and add more universal wastes. So, check with your state for the exact regulations that apply to you.

## Land Disposal Restrictions for Mercury-Containing Wastes

We regulate how hazardous wastes are managed and disposed under a program known as the [Land Disposal Restrictions \(LDR\) program](#). The LDR program works specifically to minimize potential environmental threats resulting from land disposal of hazardous waste. The LDR program achieves this by establishing hazardous waste treatment standards that make the waste safe for land disposal. The LDR regulations contain treatment standards for the RCRA hazardous waste codes, including those identified as hazardous because of mercury.

The LDR regulations categorize mercury wastes as [low mercury wastes](#), [high mercury wastes](#), or [elemental mercury wastes](#).

- **Low Mercury Waste:** Low mercury wastes are those hazardous wastes containing less than 260 mg/kg of total mercury. Current regulations require that these wastes be treated to a certain numerical level, i.e., 0.20 mg/L, measured using the Toxicity Characteristic Leaching Procedure (TCLP) for mercury residues from retorting, and 0.025 mg/L TCLP for all other low mercury wastes. These concentrations are generally met by stabilization/solidification treatment.
- **High Mercury Waste:** High mercury wastes are those that are characteristically hazardous and that contain greater than 260 mg/kg total mercury. Because of this high concentration of mercury, they are generally required to undergo roasting or retorting defined, in part, as: "Retorting or roasting in a thermal processing unit capable of volatilizing mercury and subsequently condensing the volatilized mercury for recovery." The residuals from the roasting or retorting process are then subject to a numerical treatment standard (if the residues meet the definition of "low mercury subcategory").
- **Elemental Mercury:** Characteristic hazardous elemental mercury wastes (RCRA hazardous waste code D009) are required to be roasted or retorted, if they contain greater than or equal to 260 mg/kg total mercury. Because the uses for elemental mercury in products are declining, stockpiles of excess commodity (bulk) mercury currently exist. If these stockpiles are deemed to be wastes, then they are subject to the retorting or roasting standard. Waste streams of elemental mercury contaminated with radioactive materials are required to be treated by amalgamation, defined as: "Amalgamation of liquid, elemental mercury contaminated with radioactive materials utilizing inorganic agents such as copper, zinc, nickel, gold, and sulfur that results in a non-liquid, semisolid amalgam and thereby reducing potential emissions of elemental mercury vapors to the air."

The following table summarizes the treatment standards for mercury wastes by waste code.

[View table](#)

We recently published a [Notice of Data Availability \(NODA\)](#) to make available to the public two studies conducted on treatment of mercury wastes. The studies were initiated to assess treatment and disposal alternatives to the current mercury retorting requirement. We have concluded from these studies that a change in the LDR treatment standard for mercury is not warranted at this time. The notice also provides information on how to submit a petition for a site-specific variance from the treatment standards in the current LDR regulations.

### **National Treatment Variance for Radioactively Contaminated Batteries**

On October 7, 2002, we granted a [national treatability variance](#) from the LDR treatment standards for radioactively contaminated cadmium-, mercury-, and silver-containing batteries by designating new treatment sub-categories for these wastes in response to a rulemaking petition from the Department of Energy. We found that the former treatment technologies for these hazardous wastes were technically inappropriate, because any recovered metals would likely contain residual radioactive contamination and not be usable. Therefore, we designated macroencapsulation prior to land disposal as the new treatment standard for these batteries. This variance will allow safe disposal of the radioactively contaminated batteries. Macroencapsulation is also the required treatment for K175 mercury-bearing wastes and is an alternative treatment standard for hazardous debris.

### **LDR Standards for Contaminated Debris and Contaminated Soil**

If your mercury-containing waste meets the definition for contaminated debris at [40 CFR 268.2](#) [\[EXIT Disclaimer\]](#), it can comply with either the debris Land Disposal Restrictions (LDR) standards ([40 CFR 268.45](#)) [\[EXIT Disclaimer\]](#) or with the LDR standard that applies to the waste that has contaminated the debris ([40 CFR 268.40](#)) [\[EXIT Disclaimer\]](#). The following memorandum discusses issues pertaining to the treatment and disposal of mercury-containing debris. [Memo on Treatment Standards for Mercury-Containing Debris, October 23, 2003](#) [PDF, 8 pages, 24 KB, [About PDF](#)]. Of special note is a discussion on intact containers. Under the definition for debris,

"intact containers of hazardous waste that are not ruptured and that retain at least 75% of their original volume"

are excluded from the debris definition. Examples of intact containers can include fluorescent lamps, thermometers and dental amalgam collection devices.

If your waste of concern is soil contaminated with mercury, you must comply with the LDRs at [40 CFR 268.49](#). [\[EXIT Disclaimer\]](#)